

#### ABSTRACT OF THE DISCLOSURE

A system for spatially stabilizing a base point on the optical axis of a patient's eye, for photoablation of the cornea, includes an optical element for identifying the base point. The system also includes an illumination source 5 which is a fixation point for the eye. Movement of the illumination source induces a saccadic movement of the eye wherein the optical axis of the eye moves from a first orientation to a second orientation. Following the saccadic movement of the eye there is a latency period during which the base point, and hence the eye, is substantially stabilized. Movement of the light source is 10 timed to coincide the latency period with the resting period of the patient's heartbeat sequence, and the relaxation period of the patient's respiration cycle. During the latency period, photoablation is accomplished by directing a train of laser pulses from a laser source into the corneal tissue.